IT Applications Unit 3  
Week 1  
Chp 1 Problem Solving

**The problem solving methodology and project management**An information problem arises when an organisation’s goals are not being met.  
To solve problems a planned strategy is used, a problem solving methodology which is a structured approach to creating a solution that uses a specified procedure or series of steps to follow.  
  
There are seven steps:

1. Analyse the problem
2. Design the solution
3. Develop the solution
4. Test the solution
5. Documentation to support the solution
6. Implement the solution
7. Evaluate the solution

**Keyword: ADDTDIE**

**Analyse the problem**In analysing the problem there are a number of steps to be undertaken. Briefly elaborate or list key points under each of these steps:

**Define the problem  
TASK:** Complete the Think About IT 1-13 problem statements on p23????

1. **Investigate the circumstances surrounding the problem**Investigating the problem doesn’t give us the solutions instead it provides us with a direction that we should be heading in.
2. **Determine what information is required**  
   Interviews should establish the information that is need in the solution. EG summary reports, letters or reports that respond to specific queries
3. **Determine data requirements**Identify the data needed to produce the required output.
4. **Consider the format of possible solutions**Deciding on the format of the output. It could be a website, brochure or a multimedia presentation
5. **From the identified alternative solutions determine which is best able to meet the organisation’s goals**Preferred solution
6. **Present a project brief to management for approval.**The proposal should have included a estimate cost, identification of a design and development team and a recommended timeline for production

**Designing the solution**In designing the solution there are several steps that need to be followed.  
Elaborate briefly or list the key points under each of the following steps

1. **Identifying the data required**  
   -Data needs to be collected during the design stage  
   -New data also needs to produced during the development stage  
   -Data can include: text, graphics
2. **Choosing an appropriate software solution**  
   -Software will be influenced by the type of problem and the proposed solution.
3. Processing the data
4. **Marcro design**  
   **a. What is the role of a flow chart?**  
   The role is to indicate the procedures that are to be employed to create the solution and to generate required output.  
   **b. What is an IPO chart?**  
   Input-Process-Output (IPO) identifies a programs inputs, its outputs and the processing steps required to transform the in and outputs
5. **Choosing layout designs**  
   **a. What type of layout design is used for a website?**  
   Storyboard as it shows what the site will look like and also to show the elements that are included.
6. **Choosing test data**  
   -Testing is done to make sure there are no errors  
   -Done through the development and use of test data or dummy data.
7. **Choosing conventions and applying formats  
   a. Distinguish between a format and a convention**  
   Format is to create or change the look of a document were a convention is a rule  
   **b. Text conventions**  
     
   **c. Numerical information**  
   -Numbers  
   -Whole, monetary values, use of $, %  
   **d. Dates and times**  
   -Day, month, year  
   **e. Graphs**-Title, aces (appropriately labelled) and a legend or key  
   **f. Reports**-Title (appropriate to the report), name of person who is preparing the report, date, page numbers,

**Project management plan**Project management involves planning, coordination and controlling the development of a solution to an information problem  
The roles of a project manager:

1. **The project manager breaks a project into tasks. What is a task?**  
   A task has a starting and finishing point and it involves the use of a resource.
2. **What is a resource?**  
   A resource could be a person or equipment
3. **Describe a milestone**  
   A milestone represents the achievement of a significant stage in a project and has a zero duration
4. **Why does the project manager have regular team meetings?**  
   The project manager has regular meetings to monitor the progress of the project. It is to make sure milestones have been reached, what each team member is currently working n, assign new tasks and to revise timelines if needed.

**GANTT Charts**

1. **Describe the nature of a Gantt Chart**  
   A Gantt chart is a visual representation of the schedule project.
2. **What is a predecessor?**  
   A predecessor is a task that must be completed prior to the current or specified task

**PERT charts**

1. **Describe the nature of a PERT chart.**  
   A PERT chart represents each project task in the order of their dependencies.
2. **PERT charts allow the identification of a critical path. What is the critical path?**  
   The critical path is the line that runs from the beginning of the project , through a sequence of events and concludes at the completion of the final event.
3. **What is the difference between a GANTT chart and a PERT diagram?**

**Lead time and lag time**

1. **What is lead time?**  
   Lead time is the time leading up to or before a task.
2. **Describe lag time.**  
   Lag time or also known as slack time is the amount of time there is between tasks.
3. **Why do project managers rely on lag time?**